

Claims

[c1] 1. An assembling device for mounting a second plate on a first plate, comprising:

a first carrier plate, having a first air channel, a plurality of first openings, and a first carrier area, wherein the first openings are disposed on the first carrier area and linked to the first air channel, and the first plate covering the first openings is disposed on the first carrier area;

and

a second carrier plate, having a second air channel, a plurality of second openings, and a second carrier area, wherein the second carrier plate is pivoted to the first carrier plate and stacked over the first carrier plate, the second openings are disposed on the second carrier area and linked to the second air channel, the second plate covering the second openings is disposed on the second carrier area, and the second carrier plate or the first carrier plate has a third air channel and at least a third opening linked to the third air channel such that the corresponding second plate or first plate exposes the third opening.

[c2] 2. The assembling device of claim 1, wherein the first

carrier plate further comprises a plurality of first concentric circular grooves disposed on the first carrier area with the first openings disposed inside the first concentric circular grooves.

- [c3] 3. The assembling device of claim 1, wherein the second carrier plate further comprises a plurality of second concentric circular grooves disposed on the second carrier area with the second openings disposed inside the second concentric circular grooves.
- [c4] 4. The assembling device of claim 1, wherein the first carrier plate further comprises a plurality of first positioning pins disposed on the first carrier area.
- [c5] 5. The assembling device of claim 1, wherein the second carrier plate further comprises a plurality of second positioning pins disposed on the second carrier area.
- [c6] 6. The assembling device of claim 1, wherein the first carrier plate further comprises a sealing ring disposed on the peripheral region of the first carrier area.
- [c7] 7. The assembling device of claim 1, wherein material constituting the first carrier plate is selected from a group consisting of metals and plastics.
- [c8] 8. The assembling device of claim 1, wherein material

constituting the second carrier plate is selected from a group consisting of metals and plastics.

- [c9] 9. An assembling device for mounting a second plate on a first plate, comprising:
 - a first carrier plate having a first carrier area, wherein the first plate is disposed on the first carrier area; and
 - a second carrier plate having a second air channel, a plurality of second openings, and a second carrier area, wherein the second carrier plate is pivoted to the first carrier plate and stacked over the first carrier plate, the second openings are disposed on the second carrier area and linked to the second air channel, the second plate covering the second openings is disposed on the second carrier area, and the second carrier plate or the first carrier plate has a third air channel and at least a third opening linked to the third air channel such that the corresponding second plate or first plate exposes the third opening.
- [c10] 10. The assembling device of claim 9, wherein the second carrier plate further comprises a plurality of second concentric circular grooves disposed on the second carrier area with the second openings disposed inside the second concentric circular grooves.
- [c11] 11. The assembling device of claim 9, wherein the first

carrier plate further comprises a plurality of first positioning pins disposed on the first carrier area.

- [c12] 12. The assembling device of claim 9, wherein the second carrier plate further comprises a plurality of second positioning pins disposed on the second carrier area.
- [c13] 13. The assembling device of claim 9, wherein the first carrier plate further comprises a sealing ring disposed on the peripheral region of the first carrier area.
- [c14] 14. The assembling device of claim 9, wherein material constituting the first carrier plate is selected from a group consisting of metals and plastics.
- [c15] 15. The assembling device of claim 9, wherein material constituting the second carrier plate is selected from a group consisting of metals and plastics.
- [c16] 16. An alignment jig for vacuum assembly, comprising:
 - an air-evacuating device; and
 - a sealed chamber connected to the air-evacuating device, wherein the sealed chamber comprising a first carrier plate, a second carrier plate, and a sealing ring, the first and the second carrier plate produces a sealed space through the sealing ring after evacuating the air inside, and the sealed chamber is suitable for assembling a pair of plates together at a pressure below the

atmospheric.

- [c17] 17. The alignment jig of claim 16, wherein the air-evacuating device comprises a vacuum pump and the first carrier plate has a corresponding air channel linking the vacuum pump and the sealed chamber.
- [c18] 18. The alignment jig of claim 16, wherein the air-evacuating device comprises a vacuum pump and the second carrier plate has a corresponding air channel linking the vacuum pump and the sealed chamber.
- [c19] 19. An assembling method, comprising:
 - placing a first plate and a second plate over a first carrier plate and a second carrier plate respectively, wherein the first plate and the second plate are clamped to the first carrier plate and the second carrier plate respectively by using an air-evacuating device connected to the first carrier plate and the second carrier plate;
 - flipping the first carrier plate over the second carrier plate to form a sealed chamber, wherein the first plate and the second plate are sealed in the sealed chamber;
 - pumping the sealed chamber to a first pressure below a pressure outside the sealed chamber;
 - releasing the first plate from the first carrier plate to fall on the second plate, wherein the first plate and the second plate are mutually adhered by a plastic frame there-

between;
venting the sealed chamber to a second pressure higher than the first pressure;
performing a photocuring step to cure the plastic frame by illuminating a light into the sealed chamber; and
venting the sealed chamber to the pressure outside the sealed chamber to take out an assembly of the first plate and the second plate.

- [c20] 20. The aligned assembly method of claim 1, wherein the first pressure is lower than the pressure outside the sealed chamber in a range of about 40kPa to about 50kPa.
- [c21] 21. The aligned assembly method of claim 1, wherein the second pressure is lower than the pressure outside the sealed chamber in a range of about 30kPa to about 37.5kPa.
- [c22] 22. The aligned assembly method of claim 1, wherein the photocuring step is performed by using an ultraviolet light to illuminate the plastic frame to cure the plastic frame.